UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,240	05/30/2001	Mark C. Duhon	22.1397	8266

35204 7590 03/17/2008

SCHLUMBERGER RESERVOIR COMPLETIONS
14910 AIRLINE ROAD
ROSHARON, TX 77583

EXAMINER	
GAY, JENNIFER HAWKINS	
ART UNIT	**PAPER NUMBER**
3676	

NOTIFICATION DATE	DELIVERY MODE
03/17/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

vsolis2@slb.com

Office Action Summary	Application No.	Applicant(s)	
	09/871,240	DUHON ET AL.	
	Examiner	Art Unit	
	JENNIFER H. GAY	3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3,5-11,28-39 and 42-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11,30-32,37-39,42 and 43* is/are allowed.

6)☒ Claim(s) *3,5-10,28,29,33-39 and 44-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The indicated allowability of all of the previously allowed claims except for 11, 30-32, 37-39, 42, and 43 has been withdrawn in view of the newly discovered reference(s) to *Alloy 718 for the Oil and Gas Industry*. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 3, 28, 35, and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Alloy 718 for the Oil and Gas Industry* (referred to hereafter as Alloy) in view of *Superplastic Forming of Inconel Alloy 718SPF* (referred to hereafter as Superplastic).

Regarding claims 3, 28, and 35: Alloy discloses the use of INCONEL Alloy 718 in the formation of tools used in the oil and gas industry. These tools include such things as valves, packers, and landing nipples (page 330, paragraph 4). Alloy describes INCONEL Alloy 718 as a material that has a high strength and corrosion resistance (page 330, paragraph 2). (It is noted that packers and landing nipples are considered to be a form of wellbore anchors.)

Alloy does not disclose the use of INCONEL Alloy 718SPF (the superplastic version of Alloy 718) to form downhole tools.

Superplastic describes the process by which INCONEL Alloy 718 becomes INCONEL Alloy 718SPF, a superplastic material. Superplastic also discloses the advantages of 718SPF over 718 as being a higher temperature strength and fatigue resistance (page 355, paragraph 3 and page 356, paragraph 2) as well as improving opportunities for engineering improvements and production economics (page 356, paragraph 2). Alloy 718SPF is known to be used in industries that are high-temperature

and stress such as gas turbine components and aerospace applications (page 355, paragraphs 1-3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used INCONEL Alloy 718SPF of Superplastic to form the downhole tools of Alloy instead of INCONEL Alloy 718. Using the known superplastic material INCONEL Alloy 718SPF to form tools would have achieved the predictable result of forming tools that had an increased fatigue resistance and high temperature strength and would have been obvious to one of ordinary skill.

Regarding claims 47-49: Superplastic discloses the properties of INCONEL Alloy 718SPF. These properties include an elongation to failure in excess of 200% (350%, #2 on page 363), a fine equi-axed grain structure that remains stable during formation (page 357) with a grain size of #10 or smaller (#1 on page 363).

3. Claims 3, 28, 35, 36, and 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sullaway (previously cited) in view of Alloy and Superplastic.

Regarding claims 3, 28: Sullaway discloses a downhole seal or packer **96** that is engagable with a steel element **11** (7:35-46). Sullaway further discloses an anchor **17, 17'** actuatable by the element.

Sullaway discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Alloy discloses the use of INCONEL Alloy 718 in the formation of tools used in the oil and gas industry. These tools include such things as valves, packers, and landing nipples (page 330, paragraph 4). Alloy describes INCONEL Alloy 718 as a material that has a high strength and corrosion resistance (page 330, paragraph 2). (It is noted that packers and landing nipples are considered to be a form of wellbore anchor.)

Alloy does not disclose the use of INCONEL Alloy 718SPF (the superplastic version of Alloy 718) to form downhole tools.

Superplastic describes the process by which INCONEL Alloy 718 becomes INCONEL Alloy 718SPF, a superplastic material. Superplastic also discloses the advantages of 718SPF over 718 as being a higher temperature strength and fatigue

resistance (page 355, paragraph 3 and page 356, paragraph 2) as well as improving opportunities for engineering improvements and production economics (page 356, paragraph 2). Alloy 718SPF is known to be used in industries that are high-temperature and stress such as gas turbine components and aerospace applications (page 355, paragraphs 1-3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used INCONEL Alloy 718SPF of Superplastic to form the packer/anchor of Sullaway instead of INCONEL Alloy 718 as taught by Alloy. Using the known superplastic material INCONEL Alloy 718SPF to form tools would have achieved the predictable result of forming tools that had an increased fatigue resistance and high temperature strength and would have been obvious to one of ordinary skill.

Regarding claim 35: The apparatus of Sullaway includes a packer and an anchor.

Regarding claim 36: The packer includes the element which is a sleeve attached to the anchor and the seal where the movement of the sleeve sets the anchor and the packer.

Regarding claims 47-49: Superplastic discloses the properties of INCONEL Alloy 718SPF. These properties include an elongation to failure in excess of 200% (350%, #2 on page 363), a fine equi-axed grain structure that remains stable during formation (page 357) with a grain size of #10 or smaller (#1 on page 363).

4. Claims 5 and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson (previously cited) in view of Alloy and Superplastic.

Robinson discloses a well screen that is made from stainless steel where the screen is used to filter such things as sand (1:43-53)

Robinson discloses all of the limitations of the above claim(s) except for the steel element being a superplastic material.

Alloy discloses the use of INCONEL Alloy 718 in the formation of tools used in the oil and gas industry. These tools include such things as valves, packers, and landing nipples (page 330, paragraph 4). Alloy describes INCONEL Alloy 718 as a material that

has a high strength and corrosion resistance (page 330, paragraph 2). (It is noted that packers and landing nipples are considered to be a form of wellbore anchor.)

Alloy does not disclose the use of INCONEL Alloy 718SPF (the superplastic version of Alloy 718) to form downhole tools.

Superplastic describes the process by which INCONEL Alloy 718 becomes INCONEL Alloy 718SPF, a superplastic material. Superplastic also discloses the advantages of 718SPF over 718 as being a higher temperature strength and fatigue resistance (page 355, paragraph 3 and page 356, paragraph 2) as well as improving opportunities for engineering improvements and production economics (page 356, paragraph 2). Alloy 718SPF is known to be used in industries that are high-temperature and stress such as gas turbine components and aerospace applications (page 355, paragraphs 1-3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used INCONEL Alloy 718SPF of Superplastic to form the sand screen of Robinson instead of INCONEL Alloy 718 as taught by Alloy. Using the known superplastic material INCONEL Alloy 718SPF to form tools would have achieved the predictable result of forming tools that had an increased fatigue resistance and high temperature strength and would have been obvious to one of ordinary skill.

Regarding claims 44-46: Superplastic discloses the properties of INCONEL Alloy 718SPF. These properties include an elongation to failure in excess of 200% (350%, #2 on page 363), a fine equi-axed grain structure that remains stable during formation (page 357) with a grain size of #10 or smaller (#1 on page 363).

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miszewski et al. (previously cited) in view of Alloy and Superplastic.

Miszewski et al. discloses a downhole shock absorber that includes a steel element (6:8, 9).

Miszewski et al. discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Alloy discloses the use of INCONEL Alloy 718 in the formation of tools used in the oil and gas industry. These tools include such things as valves, packers, and landing nipples (page 330, paragraph 4). Alloy describes INCONEL Alloy 718 as a material that has a high strength and corrosion resistance (page 330, paragraph 2). (It is noted that packers and landing nipples are considered to be a form of wellbore anchor.)

Alloy does not disclose the use of INCONEL Alloy 718SPF (the superplastic version of Alloy 718) to form downhole tools.

Superplastic describes the process by which INCONEL Alloy 718 becomes INCONEL Alloy 718SPF, a superplastic material. Superplastic also discloses the advantages of 718SPF over 718 as being a higher temperature strength and fatigue resistance (page 355, paragraph 3 and page 356, paragraph 2) as well as improving opportunities for engineering improvements and production economics (page 356, paragraph 2). Alloy 718SPF is known to be used in industries that are high-temperature and stress such as gas turbine components and aerospace applications (page 355, paragraphs 1-3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used INCONEL Alloy 718SPF of Superplastic to form the shock absorber of Miszewski et al. instead of INCONEL Alloy 718 as taught by Alloy. Using the known superplastic material INCONEL Alloy 718SPF to form tools would have achieved the predictable result of forming tools that had an increased fatigue resistance and high temperature strength and would have been obvious to one of ordinary skill.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. (previously cited) in view of Alloy and Superplastic.

Thompson et al. discloses a downhole steel releasable connector mechanism (6:4-7).

Thompson et al. discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Alloy discloses the use of INCONEL Alloy 718 in the formation of tools used in the oil and gas industry. These tools include such things as valves, packers, and landing nipples (page 330, paragraph 4). Alloy describes INCONEL Alloy 718 as a material that has a high strength and corrosion resistance (page 330, paragraph 2). (It is noted that packers and landing nipples are considered to be a form of wellbore anchor.)

Alloy does not disclose the use of INCONEL Alloy 718SPF (the superplastic version of Alloy 718) to form downhole tools.

Superplastic describes the process by which INCONEL Alloy 718 becomes INCONEL Alloy 718SPF, a superplastic material. Superplastic also discloses the advantages of 718SPF over 718 as being a higher temperature strength and fatigue resistance (page 355, paragraph 3 and page 356, paragraph 2) as well as improving opportunities for engineering improvements and production economics (page 356, paragraph 2). Alloy 718SPF is known to be used in industries that are high-temperature and stress such as gas turbine components and aerospace applications (page 355, paragraphs 1-3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used INCONEL Alloy 718SPF of Superplastic to form the releasable connector mechanism of Thompson et al. instead of INCONEL Alloy 718 as taught by Alloy. Using the known superplastic material INCONEL Alloy 718SPF to form tools would have achieved the predictable result of forming tools that had an increased fatigue resistance and high temperature strength and would have been obvious to one of ordinary skill.

7. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bosse-Platiere (previously cited) in view of Alloy and Superplastic.

Bosse-Platiere discloses a downhole shaped charge that includes a steel element (4:32-37).

Bosse-Platiere discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Alloy discloses the use of INCONEL Alloy 718 in the formation of tools used in the oil and gas industry. These tools include such things as valves, packers, and landing nipples (page 330, paragraph 4). Alloy describes INCONEL Alloy 718 as a material that has a high strength and corrosion resistance (page 330, paragraph 2). (It is noted that packers and landing nipples are considered to be a form of wellbore anchor.)

Alloy does not disclose the use of INCONEL Alloy 718SPF (the superplastic version of Alloy 718) to form downhole tools.

Superplastic describes the process by which INCONEL Alloy 718 becomes INCONEL Alloy 718SPF, a superplastic material. Superplastic also discloses the advantages of 718SPF over 718 as being a higher temperature strength and fatigue resistance (page 355, paragraph 3 and page 356, paragraph 2) as well as improving opportunities for engineering improvements and production economics (page 356, paragraph 2). Alloy 718SPF is known to be used in industries that are high-temperature and stress such as gas turbine components and aerospace applications (page 355, paragraphs 1-3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used INCONEL Alloy 718SPF of Superplastic to form the shaped charge of Bosse-Platiere instead of INCONEL Alloy 718 as taught by Alloy. Using the known superplastic material INCONEL Alloy 718SPF to form tools would have achieved the predictable result of forming tools that had an increased fatigue resistance and high temperature strength and would have been obvious to one of ordinary skill.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mohaupt (previously cited) in view of Alloy and Superplastic.

Mohaupt discloses a downhole weak point connector that includes a steel element (7:46-48, 8:61-65; the examiner notes that column 7 teaches that the housing **24** can be made from steel and that the housing is considered to be a portion of the weak point connector).

Mohaupt discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Alloy discloses the use of INCONEL Alloy 718 in the formation of tools used in the oil and gas industry. These tools include such things as valves, packers, and landing nipples (page 330, paragraph 4). Alloy describes INCONEL Alloy 718 as a material that has a high strength and corrosion resistance (page 330, paragraph 2). (It is noted that packers and landing nipples are considered to be a form of wellbore anchor.)

Alloy does not disclose the use of INCONEL Alloy 718SPF (the superplastic version of Alloy 718) to form downhole tools.

Superplastic describes the process by which INCONEL Alloy 718 becomes INCONEL Alloy 718SPF, a superplastic material. Superplastic also discloses the advantages of 718SPF over 718 as being a higher temperature strength and fatigue resistance (page 355, paragraph 3 and page 356, paragraph 2) as well as improving opportunities for engineering improvements and production economics (page 356, paragraph 2). Alloy 718SPF is known to be used in industries that are high-temperature and stress such as gas turbine components and aerospace applications (page 355, paragraphs 1-3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used INCONEL Alloy 718SPF of Superplastic to form the weak point connector of Mohaupt instead of INCONEL Alloy 718 as taught by Alloy. Using the known superplastic material INCONEL Alloy 718SPF to form tools would have achieved the predictable result of forming tools that had an increased fatigue resistance and high temperature strength and would have been obvious to one of ordinary skill.

9. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Alloy in view of Taylor (previously cited) and Superplastic.

Alloy discloses the use of INCONEL Alloy 718 in the formation of tools used in the oil and gas industry. These tools include such things as valves, packers, and landing nipples (page 330, paragraph 4). Alloy describes INCONEL Alloy 718 as a material that

has a high strength and corrosion resistance (page 330, paragraph 2). (It is noted that packers and landing nipples are considered to be a form of wellbore anchor.)

Alloy does not disclose the use of INCONEL Alloy 718 to form a downhole patch nor the use of INCONEL Alloy 718SPF (the superplastic version of Alloy 718) to form downhole tools.

Taylor et al. discloses a packer type of patch (1:5-15).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used INCONEL Alloy 718 as taught by Alloy to form a downhole patch similar to that of Taylor et al. as Alloy discloses using Alloy 718 to form downhole packers and Taylor et al. discloses that a packer can be used as a patch. The combination would have achieved the predictable result of a downhole patch that was resistant to corrosion and had a high strength.

Superplastic describes the process by which INCONEL Alloy 718 becomes INCONEL Alloy 718SPF, a superplastic material. Superplastic also discloses the advantages of 718SPF over 718 as being a higher temperature strength and fatigue resistance (page 355, paragraph 3 and page 356, paragraph 2) as well as improving opportunities for engineering improvements and production economics (page 356, paragraph 2). Alloy 718SPF is known to be used in industries that are high-temperature and stress such as gas turbine components and aerospace applications (page 355, paragraphs 1-3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used INCONEL Alloy 718SPF of Superplastic to form the packer/patch of Alloy in view of Taylor et al. instead of INCONEL Alloy 718 as taught by Alloy. Using the known superplastic material INCONEL Alloy 718SPF to form tools would have achieved the predictable result of forming tools that had an increased fatigue resistance and high temperature strength and would have been obvious to one of ordinary skill.

10. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arizmendi (previously cited) in view of Alloy and Superplastic.

Arizmendi discloses a downhole seal **26** that is engagable with a stainless steel element **22** (4:30-33). The element and seal of Arizmendi are compressed to plug or block fluid through the casing **14**. The tool may also be set by differential pressure or hydraulic pressure (8:42-53) which would require a port in communication with the seal in order to set the seal.

Arizmendi discloses all of the limitations of the above claim(s) except for the element being a superplastic material.

Alloy discloses the use of INCONEL Alloy 718 in the formation of tools used in the oil and gas industry. These tools include such things as valves, packers, and landing nipples (page 330, paragraph 4). Alloy describes INCONEL Alloy 718 as a material that has a high strength and corrosion resistance (page 330, paragraph 2). (It is noted that packers and landing nipples are considered to be a form of wellbore anchor.)

Alloy does not disclose the use of INCONEL Alloy 718SPF (the superplastic version of Alloy 718) to form downhole tools.

Superplastic describes the process by which INCONEL Alloy 718 becomes INCONEL Alloy 718SPF, a superplastic material. Superplastic also discloses the advantages of 718SPF over 718 as being a higher temperature strength and fatigue resistance (page 355, paragraph 3 and page 356, paragraph 2) as well as improving opportunities for engineering improvements and production economics (page 356, paragraph 2). Alloy 718SPF is known to be used in industries that are high-temperature and stress such as gas turbine components and aerospace applications (page 355, paragraphs 1-3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used INCONEL Alloy 718SPF of Superplastic to form the plug of Arizmendi instead of INCONEL Alloy 718 as taught by Alloy. Using the known superplastic material INCONEL Alloy 718SPF to form tools would have achieved the predictable result of forming tools that had an increased fatigue resistance and high temperature strength and would have been obvious to one of ordinary skill.

Allowable Subject Matter

11. Claims 11, 30-32, 37-39, 42, and 43 are allowed.

Response to Arguments

12. It is acknowledged that the above rejections are very similar to those previously given and withdrawn, however in light of the newly discovered references it was the opinion of the examiner that the rejections were valid and should be reapplied. Further and in response to applicants previous argument regarding the use of hindsight and there not being motivation in any of the applied references to make the combinations, it is noted that KSR forecloses the argument that a **specific** teaching, suggestion, or motivation is required to support a finding of obviousness. See the recent Board decisions *Ex parte Smith*, --USPQ2d--, slip op. at 20, (Bd. Pat App. & Interf. June 25, 2007) (citing *KSR*, 82 USPQ2d at 1396) (available at http://www.uspto.gov/web/offices/dcom/bpai/prec/fd71925.pdf).

It is also noted that the above decision does allow one of ordinary skill in the art to combine elements from different references so long as the results of the combination would predictable. In the instant application, the use of superplastic materials in the wellbore would achieve the predictable result of tools that had a high temperature strength and excellent fatigue resistance while providing opportunities for engineering design improvements and production economics (see pages 355 and 356 of Superplastic).

Conclusion

13. Any inquiry concerning this communication should be directed to JENNIFER H. GAY at telephone number (571)272-7029.

/Jennifer H Gay/
Supervisory Patent Examiner, Art Unit 3676

JHG, 3/13/08